

Superhero Resiliency Art Assessment for Early Adolescence: A Pilot Study

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Counseling (MAATC)

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## Institutional Review Board (IRB)

Albertus Magnus College

DATE: Feb. 22, 2021

Dear Caroline,

This letter serves to officially notify you of approval by the Albertus Magnus College IRB for you to conduct your study on “superhero resilience” as described in your IRB application. Please ensure that the confidentiality of your research participants is properly protected and that you remain within the boundaries you stated in the IRB application. If those boundaries change in relation to the study participants, please notify the IRB as an amendment may be necessary.

Your study is authorized to begin as of the date of this approval letter and is valid for one year, ending on Feb. 22th, 2022.

If you have any questions, please contact Dr. Joshua Abreu, the IRB Administrator, by e-mail at [jabreu1@albertus.edu](mailto:jabreu1@albertus.edu).

Sincerely,

Joshua Abreu, Ph.D.  
IRB Administrator

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### Abstract

The aim of this study was to develop an art assessment of resilience by drawing superheroes for early adolescents between the ages of 11 to 13 years old. Five participants with access to touch-screen computers or tablets were recruited virtually in the New England area. Participants were asked to draw a picture of a superhero using a free online art application. It was hypothesized that high scores of the Superhero Resiliency Art Assessment (SRAA), an art assessment tool created by the author, would correlate with high scores of the Adolescent Resilience Questionnaire 49 (ARQ49). Three raters were recruited as the first stage in establishing the validity of the SRAA, results determined excellent (.95) inter-rater reliability. The hypothesis was not supported as there was no correlation found between the SRAA and the ARQ49 subscale of confidence ( $r(4) = .61, p = .27$ , two-tailed) or negative cognition ( $r(4) = -.188, p = .76$ , two-tailed). Further research would be needed to determine if there is a correlation between the SRAA and the ARQ49 with a larger sample size.

### Superhero Resiliency Art Assessment for Early Adolescence: An Exploratory Study

Early adolescence is a stage of major transition in a person's life. Although there are differing opinions regarding the chronological age span of adolescence, youth between 10-18 years-old often struggle with conflict and distress (Grossman et al., 1992). Piaget (1969) suggested that early adolescence is the stage of evolution from concrete thinking to abstract thinking. According to him (1969), early adolescence (around age twelve or thirteen) is the stage when abstract thinking develops, opening the door to imaginative and novel problem-solving, moral reasoning development, as well as a greater capacity for understanding symbolism and higher order concepts. Additionally, it has been theorized that resilience levels formed during this age period become core components of a child's ability to bounce back from challenging, stressful experiences (Smith et al., 2008). In fact, Beutel et al. (2017) identified that resiliency was an integral dynamic that impacted achieving psychological developmental milestones.

During the time of adolescence there is a developmental change in moral reasoning. Piaget (1948) described a shift from the belief that rules and justice are inflexible to the belief that in order to judge someone for breaking the rules one must consider the intentions and consequences of the offender's actions. This line of thinking is known as *autonomous morality*. Kohlberg and Hersh (1977) theory of *conventional morality* further supports Piaget's (1948) theory of *autonomous morality*. Kohlberg and Hersh (1977) defined *conventional morality* as a stage in which children, now exposed to others in school and community environments, will gravitate toward and agree with the beliefs of the larger group. Children will take into account the reaction of fellow peers to their actions and begin to clarify their definition of what is morally good or morally bad based on those reactions (Kohlberg & Hersh, 1977). Santrock (2011) also posited that if early adolescents are rewarded for acting in a conventional and acceptable way to

society, they will be more likely to repeat the behavior (p. 238). Santrock's (2011) addition of a caregiver's role in nurturing morality is an important influence for children growing into early adolescents. An asset that caregivers can utilize to promote healthy moral development is the ability to invite discussions about ethics and values (p. 238). The factors that support the growth of morality ultimately impact the development of resilience.

Resilience can be described as the ability to bounce back from stressful events (Smith et al., 2008). It has also been noted as a reaction to adversities including stress and trauma (Beutel et al., 2017). In this way, resilience plays a role in how individuals adapt to their environment which may also have an impact later in life. There have been multiple studies, particularly with young people, that have focused on identifying protective factors of resilience and their relationship to adaptation via protective factors (Beutel et al., 2017; Hass-Cohen et al., 2018; Prescott et al., 2011).

Grossman et al. (1992) examined protective factors for adolescents that can impact the development of resilience. Specifically, the researchers identified five protective factors (family adaptability and cohesion, locus of control for children, parent-adolescent communication (mother), parent-adolescent communication (father), and relationships with a significant non-parent adult). These factors were examined in two separate phases of research. The first phase of the study had 199 students who indicated potential risk factors, through validated risk measures, that included low mood, deviance, low self-esteem, and low grades (Grossman et al., 1992). The second phase of the study asked 179 students to meet individually for semi-structured interviews using validated resilience measures to assess protective factors. The second phase results suggested that family adaptability and cohesion, as well as parent-adolescent

communication, were strongly correlated to high-risk adolescent's ability to function and adapt well to such risks (Grossman et al., 1992).

Skrove et al. (2012) observed the associations between resilience and lifestyle choices during research on anxiety and depression in adolescence. The goal of the study was to determine if resilience factors were associated with healthy or unhealthy lifestyle choices, as well as anxiety and depression. Participants were 7,639 adolescents (3,882 female; 3,757 male) between the age of 14-18 years old. Results of the study showed a positive correlation between resilience and the parent-child relationship as well as the number of friends reported. A relationship was also found between substance use and symptoms of anxiety and depression. The researchers questioned the direction of the relationship between substance use and the symptoms of anxiety and depression. One suggestion was that symptoms precede substance use as a form of self-medication. Another suggestion was that substance use preceded anxiety and depression symptoms due to a shared vulnerability, or due to neurobiological factors. The researchers also found that substance use and low levels of physical activity negatively correlated with resilience. The results of these studies suggest that resilience may be related to positive factors such as relationships, control, communication, and family dynamic.

There are several established psychological assessments of resilience. The Brief Resilience Scale (BRS; Smith et al., 2008), a 6-item scale, was developed to evaluate one's ability to "bounce back" from stressful events, rather than to evaluate protective factors of resilience. The scale was validated on a sample of undergraduate students. This scale has not been validated with early adolescent populations.

Connor et al. (2003) developed the Connor-Davidson Resilience Scale (CD-RISC), a 25-item questionnaire that is used to evaluate resilience of adults (18-64 years old) in five areas

that include “...personal competence, tolerance of negative affect, positive acceptance of change, control, and spiritual influence” (p. 80). The CD-RISC has been shown to be sensitive to resiliency improvement in a population that experienced post-traumatic stress disorder (PTSD) (Connor et al., 2003).

Anderson et al. (2020) developed the Adolescent Resilience Questionnaire<sup>49</sup> (ARQ<sup>49</sup>), a short form of the Adolescent Resilience Questionnaire (ARQ) developed by Gartland, et al. (2011). The ARQ<sup>49</sup> is a 49-item questionnaire that evaluates resilience and protective factors in adolescents (11- 18 years old). These protective factors include: confidence, emotional insight, negative cognition, social skills, empathy, family connectedness, family availability, peers connectedness, peers availability, school supportive environments, school connectedness, and community connectedness. The ARQ<sup>49</sup> was derived by eliminating questions within each factor subcategory of the ARQ that were found to be redundant as determined by internal consistency tests. Internal consistency of the subscales (confidence, emotional insight, negative cognition, social skills, empathy, family connectedness, family availability, peers connectedness, peer availability, school supportive environment, school connectedness, and community connectedness (Anderson, et al. 2020)) have shown acceptable psychometric properties as well as adequate convergent and discriminant validity. In addition to psychological assessments, there are also art-based assessments that contribute to evaluating a client.

Within the field of art therapy assessment tools have been developed to provide supportive evidence of a client’s mental health. Penzes et al. (2014) explained that art therapy assessments are valuable in determining what course of treatment to address. In addition, Amit et al. (2017) noted that art therapy has the unique property of being able to access visual thought and thus art therapy assessments have the potential of revealing information that may be more



difficult for traditional psychological assessments to achieve. The authors suggest that art-based assessments are useful in accessing non-verbal material because the brain has two thought processes: verbal thought (talking to oneself silently in one's own mind) and visual thought ("when perceptual information is accessed from memory..."seeing with the mind's eye" [p.2]) (Amit et al., 2017). Gilroy et al. (2012) also emphasized that illustrations allow for concrete markers of one's thoughts. Using non-verbal expression as a diagnostic tool may be useful in identifying difficult to articulate and implicit constructs such as resilience. For young adolescents, standardized written and self-report measures may be enhanced by the addition of non-verbal drawing assessments such as those commonly found in the field of art therapy.

There are few art therapy assessments that reliably evaluate resilience. Meek (2014) conducted an exploratory study to develop an art assessment of resilience using shield drawings. The formal art elements were the basis for creating the researcher's Shield Drawing Resilience Scale (SDRS). Meek hypothesized that the SDRS would measure resilience and have a positive correlation with the CD-RISC. Thirty participants (13 male; 17 female) ranging in age 24-71 years old were asked to create a shield before completing the CD-RISC. A significant positive correlation was found between CD-RISC scores and total scores of the SDRS, supporting the original hypothesis, suggesting that the SDRS is a valid art assessment tool for measuring resilience. Further, the results of the study suggest that shields, as a graphic marker, may be an indicator of resilience in artwork.

A unique benefit of art therapy assessments over traditional art-based assessments often used by non-art therapists, is that art therapy assessments place high value on a range and variety of artistic materials with the belief that material choice provides additional diagnostic information. To this end, Oster & Crone (2004) specifically touched upon the importance of

material choice in art-based assessments. They noted that those who were not formally trained in art therapy but were interested in using art in assessment should avoid the use of highly fluid materials such as finger paints. The rationale being that the use of finger paints could potentially be overstimulating for a client and lean toward regressive behavior that may complicate the diagnostic stage for non-art therapists. Oster & Crone (2004) also noted that the use of clay may lead to regressive/aggressive behavior that may be difficult for a non-art therapist to gauge meaningful information. For example, for a non-art therapist that lacks educational training in the clinical impact of certain art materials, it may be difficult to ascertain if the regression is due to a lack of art skill and familiarity with a material that leads to expected frustration and regression, or a state emotional state of regression that is symptomatic of pathology. Therefore, for clinically accurate interpretations of art-based assessments, the authors suggest non-art therapists should focus on dry drawing materials such as pencils, markers, and paper which lend a more controlled form of expression. The authors highlight the important distinction between the training art therapists receive (over non-art-therapists) with regard to the effect art material choices can have on assessment outcomes.

Brooke (2004) also discussed the art therapist's training regarding how and when art materials should be utilized. Like Oster & Crone (2004), Brooke (2004) acknowledged that fluid materials, like finger paint, could evoke regressive behaviors. Other kinds of paint, such as watercolors, are both fluid and transparent, making the material unpredictable for spontaneous expression as they are difficult to control. That being said, Brooke (2004) posited that those who choose a difficult to control medium such as watercolors were more likely to accept change, whereas those that choose pencil and paper may exhibit needs for control, structure, and firm boundaries. With such a deep understanding of methods and materials in mind, art therapists are

well positioned to accurately assess the functioning of their clients, not only by the art content created but also through the observed use of particular art materials.

Gilroy et al. (2012) emphasized that the choice of art materials along with how they are used both in the process and final product are vital to how a client engages in the assessment. An example of this presented by Gilroy et al. (2012) is the use of scissors and their inherent nature to cut (both to take out and add to an image). Gilroy et al. (2012) described the nature of scissors as a fantastic tool to assess children with trauma as the scissors reflected fragmented thoughts and gave the child the ability to put each cut out part of their expression and feelings together. Art therapy assessments invite an interplay between how a child presents themselves and their development and gives a physical representation of their internal world (Gilroy et al., 2012).

Related to these constructs, the expressive therapies continuum (ETC) provides a framework for how and why an art therapist chooses and introduces various materials to a client (Hinz, 2009). ETC organizes the range of mediums into a developmental sequence with creativity at the center-line of all items. According to ) the ETC encapsulates: kinesthetic and sensory (i.e., preverbal, rhythmic, tactile), perceptual and affective (i.e., verbal or non-verbal, emotional, attention to formal elements), and cognitive and symbolic (i.e., planning, multidimensional symbols), from bottom to top respectively . For example, kinesthetic and sensory may include finger painting for the tactile sensory aspect. An example of cognitive and symbolic may include pencil and markers that can be used to create a humorous product as the individual begins to think more abstractly and imaginatively, reflective of Piaget's (1969) views about formal operations.

In understanding the order of use of materials, Kramer (2000) developed an art evaluation of children that highlights the important events of material succession. Kramer's (2000)

evaluation begins with introducing a child to a pencil, eraser, and paper (8 ½ x 11 inch white paper) and asking the child to draw a picture of their choice to elicit information of intellectual controlled expression and story-telling (fact or fantasy). Once completed, the child would be introduced to poster paints (varying yet deliberate colors) and grey paper (18 inches x 24 inches) to elicit information about affect and mood. Then, the child is introduced to ceramic clay and clay tools (i.e., water, clay slip) and is encouraged to paint their finished pieces to invite regressive play behavior and integrate separate parts into a whole finished piece (Kramer, 2000).

Art material choice is an important part of the evaluative process when creating art-based measures. Though art therapists tend to rely on traditional art materials, digital art materials are becoming an increasingly popular choice for art-based assessments, offering a unique approach to diagnostics in the field of art therapy. In the current time of the COVID-19 pandemic when telehealth and digital art applications are the safest option for clients and therapists to continue sessions, it is imperative to cross the digital gap and understand its value in art therapy. There have been arguments for art therapy to expand into the digital era, citing that art therapists in the field must become comfortable and open to such tools (Thong, 2007). Additionally, Kapitan (2007) has stressed that there are not enough art therapists prepared to take on the task of integrating the digital platform into the field. Garner (2016) and Malchiodi (2018) both have reinforced the need for art therapists to be aware and comfortable with the digital platform as to stay current and relevant.

Malchiodi (2018) discussed the advancement of digital technology in the art therapy environment. A combination of the fast pace of technological advancement and the ease at which one can access free art programs in the 21st century is also accompanied by “digital natives,” individuals born into the digital age who find computers and tablets intuitive to understand.

Familiarity in mind, Malchiodi (2018) indicated that digital media could successfully be used as the main focus of a session or a supplemental tool for traditional projects such as collaging or drawing with pencil and paper (p. 203).

There has been controversy about digital mediums within the field. Some in the field believe that digital media in art therapy can be overwhelming or overstimulating with the number of application options and a notion that it may decrease the level of critical engagement in the therapy session (Malchiodi, 2018). Though these critiques are valid, Malchiodi (2018) emphasized the positive aspects with different populations, such as benefits to those in critical care where iPads® are easy to disinfect, people with traumatic brain injuries as their fine motor skills are challenged, and those with autism who may be adverse to tactile overstimulation.

In a study focused on treatment and media choices, Rivera (2017) compared digital art making and traditional drawing. The digital collage art making condition was found to be marginally more effective in stress reduction than the digital drawing and traditional drawing groups, suggesting that digital collage art making was impactful. These results bolster Malchiodi (2018) and Garner's (2016) suggestion that digital art media can be an effective tool in art therapy evaluation and treatment.

### **The Use of Superheroes in Art Therapy**

Because art therapy is a means of expressing oneself creatively through art materials and nonverbal communication, drawing superheroes can be an approach that provides an opportunity for creative expression through fantasy, play, and story-telling. Rubin (2007) suggested that the act of projective identity (i.e., projecting one's own identity on a subject) upon a hero-figure (or fantasy figure) benefits the perception of strength and power. Larger than life hero-figures have been popular throughout the world and with the use of the internet have become more accessible.

Rubin (2007) associated fantasy play through the lens of superheroes as a space to understand external experiences and establish mastery through the natural internal representations and symbolism that occur. In relation to Piaget's (1962) theory of symbolic play which states that it "provides the child with the live, dynamic, individual language indispensable for the expression of [their] subjective feelings for which collective language alone is inadequate" (p. 167), superheroes lend a diverse palette.

In order to create a working definition of a superhero, Rankin and Eagly (2008) conducted qualitative research in two parts. The first part focused on the definition of heroism by asking participants to name public heroes (i.e., political leaders, soldiers, caretakers) and private heroes (personally known to the participant). It was expected that heroism would be defined by taking risks and serving others. The participants ( $N=110$ ; 32 male; 63 female; 4 not reported) ranged from 18-55 years of age. Each participant completed a 5-minute survey. The researchers identified 12 themes for a definition of public heroism and 14 for private heroes. Public heroes were predominantly seen as active, political leaders, rescuers, and soldiers. Personal heroes were typically family guardians and people who met challenges.

The second part of Rankin and Eagly's (2008) research suggested that participants would perceive a greater act of heroism if there was a higher risk to self and greater benefit to others. A convenience sample of 222 undergraduate students (82 male; 140 female) ranged in age from 18-22 years. Participants were asked to read one of two heroic scenarios. Scenarios were manipulated to change the level of risk to the hero (either low or high) and for the level of benefit for the child (low or high), as well as what gender the hero was perceived. Participants completed the Perceptions of Heroism, Courage, Virtue, and Danger scale, which used a 7-point Likert type scale to rate 12 items related to heroism and perception of the gender of the hero. The

authors concluded that men were perceived to perform a rescue more than women, but that women's perceived likelihood of rescuing was greater when they read about a female protagonist. Findings also suggested that if the risk was greater and the benefit was greater, the perception of heroism was stronger, supporting the initial hypothesis.

Kinsella et al. (2015) developed a prototype study to create a consistent and clear definition of a hero. A consistent definition of a hero would improve educational and therapeutic techniques. The researchers suggested that certain features of a hero would occur more frequently (central features) while others would be less frequent (peripheral features). They conducted seven studies which included free-responses, rating scales, reaction time activities, memory tasks, and priming paradigms. Their studies found that the central features, *moral integrity, honesty, courage, and self-sacrifice* were the strongest associated with heroes and easier to recall from memory tasks.

Williams (2019) also researched the relationship between the creation of superheroes and the connection to developing resiliency via a strength-based approach. Forty-one children and adolescents ranging from nine to 17 years of age were asked to think about their favorite hero (including fictional and real people) and name three of their qualities. Based on the responses, the researcher concluded that an accurate definition of a superhero for young adolescents would be "A person who you consider to be very brave and honest with a strong set of good beliefs. They can be a real person or a made-up character."

The historical evolution of superheroes as a symbolic representation of social constructs, began with them being categorized as merely black-and-white archetypes (Rosenberg & Canzoneri, 2008). Specifically, through a western viewpoint, superheroes started with Jerry Siegel and Joe Shuster's creation of Superman in 1938. According to Fingerioth (2004), early

representations of superheroes were either someone who was good or someone who was evil. These characters existed in worlds where rules were made to be followed, and those that broke them would be punished. This mode of thinking is reflective of Piaget's stage of heteronomous morality of children between ages 4 and 7 (Piaget, 1969). As the western superhero genre evolved, superheroes took on the role of exacting judgment on the behaviors of others. Comic book stories would often include the hero as the judge, juror, and executioner and this narrative became a popular discussion among comic book writers and audiences (Fingeroth, 2004). The continued evolution of the symbolic role of a superhero reflected Piaget's (1948) stages of moral development with a focus on autonomous morality which generally appears around age 9 or 10 years old. For this reason, it is easy to see the inherent popularity of superhero narratives with children and adolescents and the subsequent translation to a diagnostic tool in art therapy that may reflect internalized constructs of morality that appear tied to the protective factors necessary to facilitate resilience.

### **Purpose of Current Study**

The current pool of art therapy resilience assessments is limited, therefore the present study aimed to expand the research further in this area. The goal of the current research is to begin to develop an art assessment tool for resilience, the Superhero Resilience Art Assessment (SRAA). This tool is being designed to assess resilience based on graphic indicators located in the depiction of a superhero.

It is hypothesized that high scores on the SRAA will directly correspond to high scores on the Adolescent Resilience Questionnaire 49. This is the first phase of developing the SRAA. In this phase, the goal is for the researcher and raters is to explore if graphic indicators for the SRAA exist to establish construct validity. Due to time constraints, it is not possible during the



beginning phase to evaluate if the SRAA measures resilience. In a future study, the second phase will focus on validating the SRAA. The second phase will determine if there are no other interpretations of the graphic indicators other than indicating resilience by gathering more evidence. This evidence will be obtained via positive and negative correlations of other assessments.

## **Method**

### **Participants**

The present study used a convenience sampling method to recruit participants ( $N=5$ ). To qualify, participants had to be between the ages of 11-13 years old and were required to have access to a touch screen computer, tablet (i.e., iPad ®), or smart-phone. Participants were also required to have a quiet and private space from their location throughout the study's duration. Participants ranged in age of 11-12 years old, with an average of 11.75 years old. The sample was 60% girls, 20% boys, and 20% gender-fluid individuals. Race was an average of 100% white, and 25% non-Hispanic/Latinx, 75% prefer not to say, and 25% no response. Participants were recruited via social media, physical flyers, and colleague networks throughout the New England area (Appendix A). The COVID-19 pandemic may have been a contributing factor for the small sample.

### **Instruments**

#### ***Demographic Questionnaire***

Information regarding the participant's age, gender identity, ethnicity, race, how often they created art outside of an art class (60% occasionally, 20% rarely, and 20% frequently), whether they were familiar with digital art media (60% occasionally, 40% frequently), and if

they had ever had art lessons outside of school (80% yes, 20% no) were collected using a demographic questionnaire.

### ***Adolescent Resilience Questionnaire 49***

The Adolescent Resilience Questionnaire 49 (ARQ49) is a 49- item self-report questionnaire with 12 scales that utilizes a 5 point Likert-type scale ranging from 1= *never* to 5= *all the time* (Anderson et al., 2020). The ARQ49 is a shortened version of the Adolescent Resilience Questionnaire (Gartland et al., 2011). This brief version of the ARQ enables the reduction of respondent burden, thus making it more user friendly. This measure assesses both environmental factors and individual factors of resilience in adolescents with sub-scales. These subscales are confidence, emotional insight, negative cognition, social skills, empathy, family connectedness, family availability, peers connectedness, peer availability, school supportive environment, school connectedness, and community connectedness (Anderson et al., 2020). Internal consistency of each subscale has been determined to be between the range of acceptable ( $\alpha > 0.70$ ) to excellent ( $\alpha > 0.80$ ), with the expectation of Individual Empathy/Tolerance ( $\alpha = 0.614$ ) (Anderson et al., 2020). Item-total correlation coefficients ( $r > 0.63$ ,  $p < 0.001$ ) were determined to be highly significant. Convergent and discriminant validity were also determined to be adequate.

### ***The Superhero Resiliency Art Assessment***

The Superhero Resiliency Art Assessment (SRAA) was developed by this researcher to measure resilience in adolescents. The drawing task was developed from existing theory on the definitions and characteristics of superheroes (Rankin and Eagly, 2008; Kinsella et al., 2015; Rosenberg & Canzoneri, 2008) and indicators of resilience (Meek (2014). Constructs of the measure that are deemed to be indicators of resilience were drawn from these same defining theories and fall into

three main categories: focused on morality development, confidence, and protective factors (Beutel et al., 2017; Hass-Cohen et al., 2018; Prescott et al., 2011; Grossman et al., 1992). Only one of these constructs (confidence) will be examined in this study. Graphic indicators for confidence were also selected from the drawings of participants who scored within the top  $\frac{1}{3}$  and bottom  $\frac{1}{3}$  of the Adolescent Resilience Questionnaire49 (ARQ49). Graphic indicators of confidence for the SRAA were identified as follows: words or letters present, arms extended, and hand-drawn versus available shape library. Graphic indicators of negative cognition (as a negative expression of confidence) included: artistic developmental level, hands visible, feet visible, and figure transparency.

## **Materials**

*AGGIE.IO* (© Code Charm Inc., 2021), a web-based drawing application that has multiple digital art tools that includes a pencil, shape tool (squares and circles), and eraser. This application is an anonymous and secure virtual canvas where multiple individuals can create art in real-time together. One viewer can observe the process of another in real-time. The canvas was (19.72 in. x 27.77 in.; 50.08 cm. x 70.5358 cm.). Participants were able to create art with the use of touch screens. For the purpose of this study, participants used touch screen computers, tablets (i.e., iPad®), or smart-phones only.

## **Procedure**

Participants met with the researcher through Zoom™, a HIPAA compliant virtual video platform to allow for face-to-face interaction between the researcher and participant. Although this was not the original plan to collect data, due to COVID-19, participants were in their private room within their homes and met individually with the researcher to conduct this study.

At the start of each meeting, the researcher followed a set script (Appendix B). The researcher read through the consent form with the parent and participant (Appendix C), then the assent form (Appendix D), then the image release form (Appendix E). After forms were signed, the parent emailed the signed forms to the researcher and the parent was also able to keep a copy. The parent was then asked to complete an emergency contact form (Appendix F) that included their phone number and physical address, and was then asked to leave the room for the remainder of the study. At the completion of the study the parent was asked to return to participate in the verbal debriefing.

When the study began, the researcher explained to the participant how to use Aggie.io ©, the online virtual art canvas. Participants were directed to use a touch-screen computer, tablet, or smartphone with touch-screen capabilities and to use their finger to draw directly on the screen. The researcher created a canvas on Aggie.io © that was 27.8 inches x 19.7 inches and positioned vertically to standardize the size for each participant. Participants were asked to create a superhero on the digital art-making program and were reassured that artistic ability was not required. The definition of a superhero for this study, as explained to the participant, was as follows: “A person who you consider to be very brave and honest with a strong set of good beliefs. They can be a real person or a made-up character.” The participant had 20 minutes to complete the task. The researcher observed the art making process and took notes on the progress. Note taking was not observed by the participant and the researcher wrote in a HIPAA compliant file stored on an external hard-drive. The process was not recorded. Once the task was completed, a copy of the final art product was saved via the save function of Aggie.io © and was transferred to a secure external hard-drive. Participants were asked to free-write a narrative about their hero in the Zoom™ chat box, they were given 5 minutes to do so. The chat was saved by

the researcher. After the narrative was completed, participants were asked to fill out a protected and confidential Google Forms™ version of the ARQ49 (Appendix G), as well as a demographics form (Appendix H). The Google Forms™ version of the ARQ49 was designed to replicate the original questionnaire format as closely as possible through similar Likert-scale design and allowed for participants to skip questions. Upon completion the participant's parent was asked to return to the room and a PDF file of the debriefing form (Appendix I) was provided along with a verbal debriefing.

Once the data was collected and graphic indicators for the SRAA were established by the researcher a rating manual (Appendix J) was created. Three students from Albertus Magnus College with graduate level training in art therapy and counseling volunteered to rate the presence and/or quality of graphic indicators. The researcher created a SRAA rater manual script (Appendix K) to train the raters at the same time in a Zoom™ meeting. Once the raters demonstrated proficiency with the manual, they were sent to separate virtual rooms to rate the de-identified participant drawings with a secure Google Forms™ created by the researcher.

### **Digital Protection Protocol**

While still in the early stages of the pandemic, the most recent American Psychological Association (APA) and institutional IRB guidelines were used to inform how the data was to be collected remotely. All Google Forms™ were created via the Albertus Magnus College student account to protect any data from being tracked. The consent form, assent form, image release form, and emergency contact forms were created in one Google Forms™. The ARQ49 and demographics were created in a separate Google Forms™. This method was designed to separate sensitive and personal information from the data. The emergency contact form was designed to be deleted immediately after the session to enhance protections of the participant. Raters were

trained via Zoom™, separated into private rooms during the rating period, and were required to use their Albertus Magnus College email addresses to ensure confidentiality and adhere to APA compliance. These steps ensured the digital safety of each participant in accordance to APA.

### **Results**

The intra-class correlation coefficient for inter-rater reliability of the SRAA was excellent, at .95 (.91 - .97). While a correlation was not found between the SRAA and ARQ49 Confidence subscale,  $r(4) = .61, p = .27$ , two-tailed, a trend was noted. No correlation was found between the SRAA and ARQ49 Negative Cognition sub-scale,  $r(4) = -.188, p = .76$ , two-tailed. However, the relationship was in the expected direction. To determine the needed power for this study a post-hoc power analysis was conducted, with a finding that a sample size of at least  $N=76$  would provide an effect size of .6.

### **Discussion**

This exploratory study was the first step in developing a superhero art assessment of resilience for early adolescents between the ages of 11 to 13 years old. Although no correlation was found between the SRAA and indicators of confidence and negative cognition, a number of reasons may have contributed to these findings.

While there was no statistical significance between the ARQ49 and the SRAA, it may be beneficial to future research to discuss the artwork in relation to the subscales of confidence and negative cognition. The confidence subscale and the negative cognition subscale of the ARQ49 were significantly correlated to an adolescent's quality of life (Anderson et al., 2020). Confidence and negative cognition also relate to internalized locus of control (Grossman et al., 1992). Internal locus of control was considered an individual protective factor for increased resilience (Grossman et al., 1992). The subscale of confidence and negative cognition were

developed to assess an adolescent's internal control of their emotions. High scores of confidence and low scores of negative cognition may imply that the individual has a good sense of their own self-concept and strong internal locus of control.

Graphic indicators of confidence were identified based on existing art therapy literature suggesting that when words or letters are present that might suggest an openness to others and confidence of creating connections as opposed to when the absence of words may indicate an inability to express oneself verbally to others (Malchiodi, 2012). When arms are drawn extended from the body that might suggest that they are confident in reaching out to others for support and have strong interpersonal skills (Koppitz, 1968). Additionally when artwork is hand-drawn versus using pre-drawn or available shape library images, that might suggest that they have more confidence in creating art than those who use pre-drawn shapes (Malchiodi, 2006).

Graphic indicators of negative cognition (as a negative expression of confidence) included: artistic developmental level, hands visible or hidden as hands hidden might suggest a lack of confidence (Machover, 1980). Feet visible or hidden as feet hidden might suggest that there is a source of insecurity, inadequacy, lack of stability, and lack of self-assurance (Machover, 1980; Catte, 1998), and figure transparency as it might suggest feelings of anxiety (Machover, 1980).

The drawing of Figure 1 is a strong example of artwork from a participant that scored in the mid-range on the ARQ49 subscale of confidence (18), negative cognition score was low (12), and her SRAA was high (16.33). The participant who created this drawing was 12 years old, female identified, and White with experience with digital art in the past at the time of research. She created what appears to be a hand-drawn figure with a cape, hands on hips, and an "A" symbol on the middle of the shirt. The image is hand-drawn and the presence of letters may

imply that the participant has high confidence. Hand-drawn figures may indicate that the individual is confident in their artistic expression. Letters may indicate that the participant is open to and confident toward connection.

The second drawing, Figure 2, was drawn by another 12 year old White individual that identified as female, also having had experience with digital art. This participant was an excellent example of low confidence scores of the ARQ49 (11), mid-range score on negative cognition (15), and a mid score of the SRAA (10.67). The participant used the available shape library (i.e., circle tool and square tool native to Aggie.io ©) for the majority of their figure, no letters or words present, and arms not extended. These elements may imply that the participant has low confidence due to her reliance on the available shape library that may have been because of a low artistic confidence.

Though the results of this study did not show a statistical significant correlation between the SRAA and ARQ49 subscales, anecdotal observations suggest that the SRAA may have benefits in the field of art therapy. Currently, there are no published art therapy assessments of resilience. If early adolescent's drawings of a superhero have the ability to indicate resilience, then it would only further expand an art therapist's repertoire and enhance a client's treatment. This particular assessment may be useful for early adolescents who have had many adverse events in their lives and may not be able to verbally explain their situation as suggested by the literature (Amit et al, 2017; Gilroy et al., 2012). All of this suggests that this exploratory study should be repeated with a larger sample and additional ARQ49 subscales such as emotional insight, social skills, empathy, family connectedness, family availability, peers connectedness, peer availability, school supportive environment, school connectedness, and community connectedness (Anderson, 2020). There is also a possibility that with such a small sample size,



there may have been a Type II error. While it may not completely explain the results, a Type II error may suggest that accepting the null hypothesis could be a false negative.

The use of projective arts-based assessments, in general, have value when working with teens. Due to the inherently projective nature of art therapy assessments, early adolescents who may be resistant to traditional talk therapy may reveal a more accurate assessment of their resilience via the SRAA. Graphic indicators of the SRAA provided concrete markers of participant's thoughts and, as stated by Amit et al. (2017), art therapy assessments have the benefit of accessing both verbal thought and visual thought. Even if correlations with resilience are not statistically identified, this assessment may be useful for young adolescents who are guarded or could benefit from the use of art as a means of identifying strengths and coping strategies.

Further, the development of the protocol for this study showed that drawing a superhero can be successfully completed on a fully digital platform. The use of digital platforms in art therapy (and more recently in response to the pandemic) is well supported and viewed as a future direction for the field (Malchiodi, 2018). Because current teens were raised in a digital age, known as “digital natives”, they are quite capable of understanding digital mediums on an intuitive level (Malchiodi, 2018). This level of comfort with digital art platforms was reflected in the response from participants during the present study. The participants, separate from their resiliency results, were observed to be comfortable with a digital platform and were able to understand how to use Aggie.io© easily within a five minute tutorial. Two participants were noted to understand the program before the researcher even began the tutorial. This supports the use of digital mediums for this age group in a broad range of art therapy assessment and treatment.

Of note, future research with digital art platforms should consider the implications on data analysis when participants use a touch screen versus a stylus. In this study, although all participants had access to a touch-screen device, not all had access to a stylus. A stylus is a tool used in digital medium for better control and greater application of detail in various art programs, akin to using a finger to paint rather than a brush or pen. Without a stylus, the participant must rely on their finger, which may be bulky and difficult to control on a screen. This may have contributed to a loss of detail that may have been easier to create with traditional mediums such as pencils, markers, and colored pencils. Subsequently, the use of touch screens may have impacted the data analysis of the drawings.

Another possible consideration for future research would be the use of traditional art materials rather than digital touch-screens and smartphones. Malchiodi's (2018) argument that digital media could be successfully utilized as a main focus of an art therapy session is supported; however, the use of digital media without a stylus on a touch-screen leaves room for a loss of detail in a drawing that may be vital to an illustration such as a superhero. Perhaps the use of pencil, colored pencil, markers, and eraser on multi-media paper would increase a participant's motivation to add more detail to their superhero. A possible model for research may compare both digital and traditional art materials against measures of resilience.

An important limitation of this study included having to recruit participants with minor status (age 11-13 years old) through a digital platform. Working with minor participants creates additional barriers of IRB consent. Additionally, the COVID-19 pandemic likely limited the number of recruited participants based on the multiple stressors children and families experienced in the transition to online learning. Flyers, emails, and social media posts may have reached young adolescents; however, consent requirements and scheduling issues were likely

perceived as unnecessary stressors, an acknowledgment of the level of pandemic burnout for both the parent(s) and adolescents. A proposed solution to this limitation would be to establish a connection with a middle school to distribute flyers and coordinate students and parents. Another proposed solution would to instead run this assessment in-person, post-COVID-19.

Another limitation to this research was the ARQ49 measure itself. The researcher was unable to obtain the original copy of the ARQ49 by Anderson et al. (2020), thus, the results may have been skewed. The original ARQ49 had a unique order of the questions that prevented the participant from becoming aware of what the measure was meant to assess. To develop a future study, the original ARQ49 would need to be obtained.

A final note of limitations also included time constraints. Due to the nature of COVID-19 as well as educational timelines for thesis completion, the nature of this research is exploratory and preliminary. A full examination of the efficacy of a newly created assessment takes a significant amount of time. In this preliminary work of first examining two of the twelve subscales that the ARQ49, more time would have allowed for deeper analysis of qualitative content (such as the written narratives) and further analysis of additional subscales. A proposed next step would be to compare the SRAA with all twelve subscales of the ARQ49 as well as develop a manual to axial code the content of the written narratives as part of construct validity.

In addition to obtaining a larger sample size, future research should also diversify the population of young adolescents, in the areas of race, gender, ethnicity, and mental health, to obtain results that are more generalizable to the population as a whole. The current study demographics were those who identified as white and mental health was not screened. The limited demographics made it difficult to generalize the data.

Lastly, future research may consider the value in modifying the SRAA instructions to focus relatedness, connectedness, and availability to others, all of which are relational constructs of the ARQ49. This could simply be a modification of the prompt such as “ Draw a person who you consider to be very brave and honest with a strong set of good beliefs. Show this person interacting with another person. Either figure can be a real person or a made-up character.” In this way, the artwork shows the superhero interacting with someone else, creating a relational dynamic.

In summary, in spite of a lack of statistical significance, the first phase of this research presented an excellent opportunity to explore the SRAA and superheroes drawings as part of art therapy assessment and treatment. Superheroes have been a powerful force for imagination, play, and wonderment. Through art therapy, superheroes have the beautiful potential of assisting the healing process for young adolescents.

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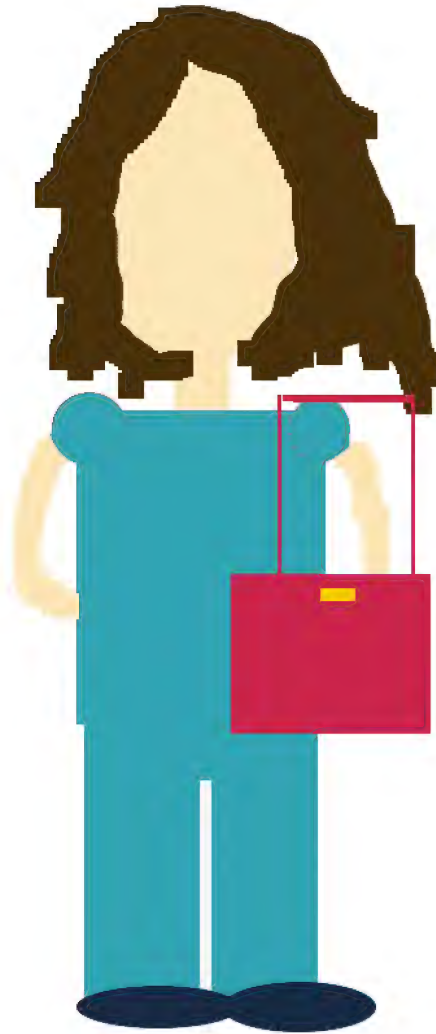
**Figure 1**

*Hand-Drawn Figure Example*



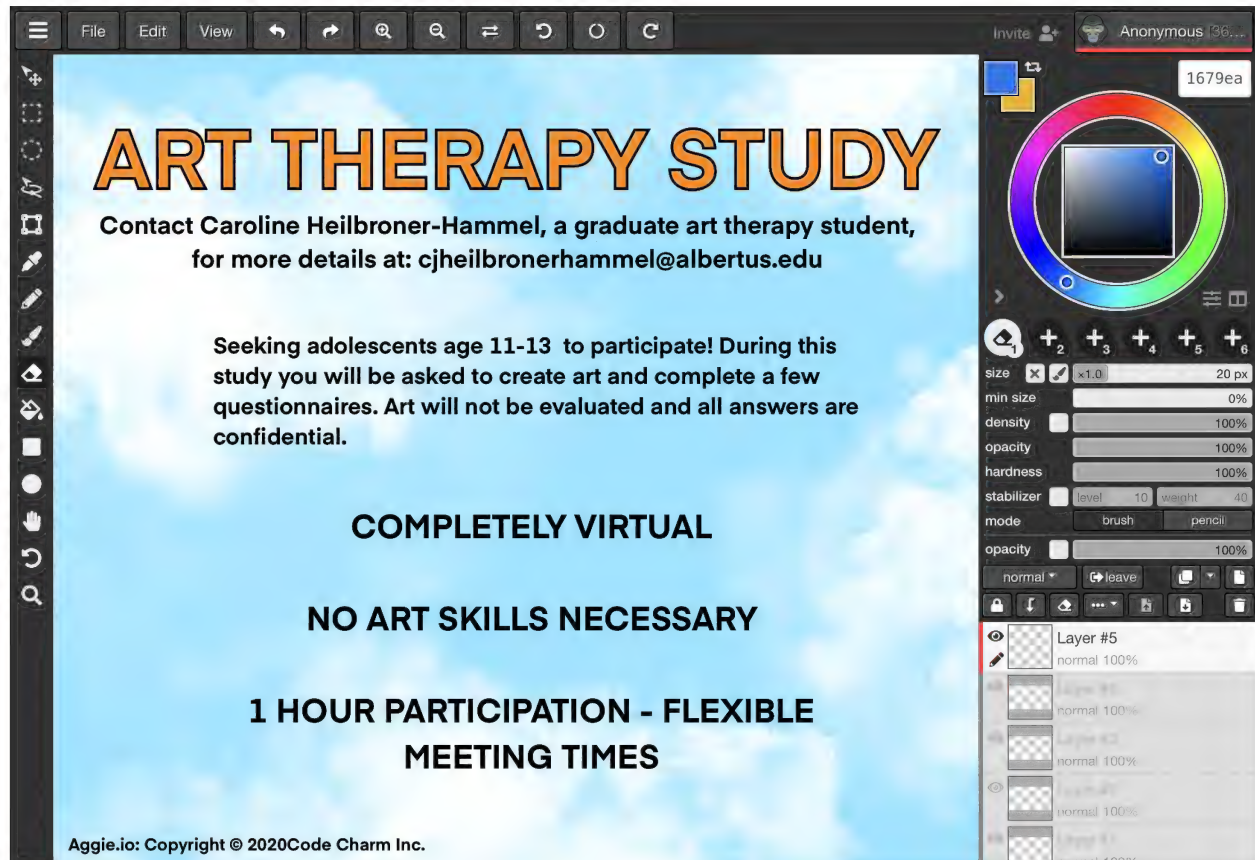
**Figure 2**

*Available Shape Library Figure Example*



## Appendix A

## Recruitment Flyer



The image shows a digital flyer for an "ART THERAPY STUDY" created in a software application. The flyer has a light blue background with a subtle cloud pattern. The title "ART THERAPY STUDY" is in large, bold, orange-outlined letters. Below the title, the contact information for Caroline Heilbroner-Hammel is provided. The flyer lists the study's focus on adolescents aged 11-13, the tasks of creating art and completing questionnaires, and the confidentiality of responses. It also highlights that the study is "COMPLETELY VIRTUAL", requires "NO ART SKILLS NECESSARY", and offers "1 HOUR PARTICIPATION - FLEXIBLE MEETING TIMES". The footer includes the copyright information for Aggie.io.

**ART THERAPY STUDY**

Contact Caroline Heilbroner-Hammel, a graduate art therapy student,  
for more details at: [cjheilbronerhammel@albertus.edu](mailto:cjheilbronerhammel@albertus.edu)

Seeking adolescents age 11-13 to participate! During this study you will be asked to create art and complete a few questionnaires. Art will not be evaluated and all answers are confidential.

**COMPLETELY VIRTUAL**

**NO ART SKILLS NECESSARY**

**1 HOUR PARTICIPATION - FLEXIBLE MEETING TIMES**

Aggie.io: Copyright © 2020Code Charm Inc.

## Appendix B

## Script:

**Researcher:**

Good (morning, afternoon, evening). Before we begin, I'd like to ask that you are in a quiet room in your home and that your guardian is with you [**wait for confirmation**].

When you are ready, I'm going to send you a link to the chat feature of Zoom™. It will send you and your guardian to the consent form. Let me know when you have received the link and gone to the page with the consent form. [**wait for confirmation**]

I'm going to read through the consent form with your guardian. [**read through consent form and answer any questions that may come up**]. If you understand everything that I have read, please sign if you agree to have [insert name] participate in this study and hit send when completed. You can also ask me any questions about something you don't understand. [**wait for confirmation**]

There are two more forms for your guardian to complete. I'm sending another link in the Zoom™ chat feature. The link will bring you to an image release form, as I did with the last form, and you can check the boxes that you agree to. Again, you can ask questions about anything that you don't understand. [**read over image release form and answer any questions that may come up**]. Please sign below if you agree with the boxes that you have checked and hit send when you're done. [**wait for confirmation**].

I'm going to send you a link in the Zoom™ chat feature. This will send you to an assent form. I'm going to read over the assent form with [insert name] and have them sign to make sure that they agree to what you, as the parent, have given permission for them to do. [**read through assent form and answer any questions that may come up**]. You can ask questions about anything that you don't understand. Please type in your name at the bottom and hit send if you want to participate. [**wait for confirmation**]. Thank you.

One last form for your guardian. Please follow the next link in the Zoom™ chat feature. This link will send you to the emergency contact form. I ask that your guardian fill out this form in the event that an emergency occurs. I will go over this form and you may ask about anything that you don't understand. [**read over emergency contact form**]. Please fill out the required information below. [**wait for confirmation**] Thank you.

We are all set to start. I must ask that your guardian leaves the room for a little bit. We'll be done in about 30 minutes. I will text your guardian when it is time for them to return. Thanks. [**wait for the guardian to leave room**]. All set? I'm sending a link in the chat feature again. This is sending you to a website called Aggie.io © .

Instructions for training participants to use the digital program:

You're going to see a list of icons on the left side. Let's try them out for a moment. Try clicking the one that looks like a brush. Try it on the screen with your finger. Try changing the color on the right side of the screen, see that color circle? Move the colors around and try your brush again. Let's try out the eraser tool, it's right under the brush tool. Give it a tap. Now try and move

your finger over the colors. Now it's gone. Now let's learn how to change the size of your brush. On the right of your screen you'll see a little sliding bar labeled "size". Try moving the bar left and right. See how the size gets smaller or bigger?

If you feel like you understand how to use the program then we are ready. What do you think?  
**[Wait for confirmation]** Let's begin.

I'd like you to draw a superhero who you consider to be very brave and honest with a strong set of good beliefs. They can be a real person that you consider to be a superhero or a made-up character. Don't worry about your ability to draw, that's not important. What's important is that you just try your best. Most people draw for about 20 minutes but you might take more or less time. I'll let you know when you've reached 20 minutes. Go ahead and start. **[time for 20 minutes]**

**[after 20 minutes is up]** This looks great. **[researcher takes a screenshot of the final drawing, if consent was given]**.

Let's head over to the Zoom™ chat box. I'd like you to write anything you'd like about your hero. Most people take about 5 minutes to write but you might take more or less time. **[wait for time to pass, copy participant narrative on confidential and secure document]**

Thanks so much. There are two more things to do before we are done. I'm going to send a link in the Zoom™ chat. It'll send you to an online survey on Google Forms™. Let me know when you're on the screen. **[wait for confirmation]**. Please fill out the form until you reach the end.

It's going to be in two parts. Let me know when you're done or if you have any questions. [**wait for confirmation that it is complete**]

For this part, I am going to ask your guardian to come back to the room. One moment. [**text guardian to return**][**wait for guardian to enter**] Thank you for returning. This is the last link. Go to the Zoom™ chat and click it. It'll open one last form and it says "debrief". See it? [**wait for confirmation**]. The debrief explains a little more about the research that I am doing. I'm going to go over this debrief with both of you and when I'm done you will be finished, too. [**read debrief and answer any questions that may arise**]

Thank you so much for participating in my study. I hope you enjoy your hero and have a great rest of your day. Make sure to sign out of this meeting.

## Appendix C

### Informed Consent

#### Informed Consent Form:

This study is being conducted as part of the requirements for the completion of the Masters of Arts in Art Therapy and Counseling degree at Albertus Magnus College. The purpose of this study is to better understand art making and feelings.

During this study your child will be asked to take part in an art making activity and then complete a demographic form and a questionnaire about dealing with stress. The design of the study requires that the researcher take a screenshot of the artwork. Following the art making, there will be a brief discussion about the process. Participation in this study is confidential for your child, though you as the legal guardian may ask for aggregate results (results from the entire sample, but not your child's individual scores). The study is expected to take approximately 45 minutes.

Participation is completely voluntary and if for any reason your child would no longer like to participate, your child is welcome to withdraw at any time. There is minimal risk to this study, but sometimes unpleasant feelings can come up when asked questions about oneself. Feelings of frustration can also arise when doing art and learning a new art medium. Benefits of this study may include enjoying art making and assisting a graduate student in the completion of her thesis requirement, as well as contributing to the field of art therapy. The Institutional Review Board (IRB) at Albertus Magnus College has approved this study.



If you have any questions or concerns about this study you may contact the following individuals:

The Investigator:

Caroline Heilbroner-Hammel

[cjheilbronerhammel@albertus.edu](mailto:cjheilbronerhammel@albertus.edu)

Art Therapy Advisor:

Lisa Furman, Ph.D.

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Psychology Advisor:

Bonnie Pepper, Psy.D.

[bpepper@albertus.edu](mailto:bpepper@albertus.edu)

Or:

Joshua Abreu, Ph.D., Chair of IRB

[jabreu1@albertus.edu](mailto:jabreu1@albertus.edu)

Your signature below indicates that you, the legal guardian, have read and understand the description of the study, have had all your questions addressed, and your child is willing to participate.

Name (print): \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_ I received a copy of this form for my record

## Appendix D

### Assent Consent

#### Assent Consent Form:

This study is being conducted as part of the requirements for the completion of the Masters of Arts in Art Therapy and Counseling degree at Albertus Magnus College. The purpose of this study is to better understand art making and feelings.

During this study you will be asked to complete a demographic form and a questionnaire about dealing with stress and take part in an art making activity. The design of the study requires that the researcher take a screenshot of the artwork. Following the art making, there will be a brief discussion about the process. Participation in this study is confidential and is expected to take approximately 45 minutes. Any discussion and artwork will remain private and confidential without the use of your name. The design of the study requires that the researcher hold onto a copy of the artwork. Please note that art abilities are not a factor and will not be considered.

This is a completely voluntary study and if for any reason you would no longer like to participate, you are welcome to withdraw at any time. There is minimal risk to this study, but sometimes unpleasant feelings can come up when asked questions about oneself. Feelings of frustration can also arise when doing art and learning a new art medium. Benefits of this study may include enjoying art making and assisting a graduate student in the completion of her thesis requirement, as well as contributing to the field of art therapy. The Institutional Review Board (IRB) at Albertus Magnus College has approved this study.

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The Investigator:

Caroline Heilbroner-Hammel

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Psychology Advisor:

Bonnie Pepper, Psy.D.

[bpepper@albertus.edu](mailto:bpepper@albertus.edu)

Or:

Joshua Abreu, Ph.D., Chair of IRB

[jabreu1@albertus.edu](mailto:jabreu1@albertus.edu)

Your signature below indicates that you have read and understand the description of the study, have had all your questions addressed, and are willing to participate.

Name (print): \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_ I received a copy of this form for my record

## Appendix E

## Image Release Form

## Image Release form:

Your child is being asked to allow the investigator to use a screenshot of their artwork for educational purposes. Please note your child's identity will remain confidential. Please check off your preference below in regard to your artwork:

- ☐ I agree that screenshot images of my child's artwork can be used for educational purposes including publications, presentations at professional conferences, or for training purposes.
- ☐ I agree that screenshot images of my child's artwork can be used for educational purposes including presentations at professional conferences or for training purposes, but not for publications.
- ☐ I agree that screenshot images of my child's artwork can be used for educational and training purposes, but not presentations at professional conferences or publications.
- ☐ I do not give permission for my child's artwork to be used for the above purposes.

I hereby give consent as noted above for the use of my child's artwork.

Name (print): \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_ I received a copy of this form for my record

\*You may revoke permission at any time by contacting \_\_\_\_\_. However, please note that once images have been disseminated publicly they may be difficult or impossible to obtain should you change your mind.

## Appendix F

## Emergency Contact Form for Remote Data Collection

**Emergency Contact Form for Remote Data Collection**

Because data for this study will be collected remotely via an online platform, you are asked to please stay within close proximity (in a nearby room) for the duration of the time that your child is participating. In this way, your child can participate without distraction but you will be accessible in the event of an emergency or some other reason that you might need to be reached.

Please provide the physical address of where you will be during the data collection. Also provide a telephone number where you can be reached during this time. Your physical address will only be used in case of an emergency. Your phone number will be used so that the researcher can text you once the study is over to enter the room for a final debrief.

This contact form and its contents will be deleted as soon as data collection is over. Any information on this form will only be used during the duration of the data collection.

**Telephone number:** \_\_\_\_\_

**Physical address (where will you be in case of an emergency):** \_\_\_\_\_

## Appendix (G)

Adolescent Resilience Questionnaire<sup>49</sup>

Please reach each question and select which number most relates to you. There are no wrong answers, this is just how you feel. There is no need to look up answers.

1=Never, 2=Not often, 3= Sometimes, 4= Most of the time, and 5= All the time.

Item #	Description	Never	Not often	Sometimes	Most of the time	All the time
1	I am confident that I can achieve what I set out to do	1	2	3	4	5
2	I feel confident that I can handle whatever comes my way	1	2	3	4	5
3	I am a person who can go with the flow	1	2	3	4	5

## Appendix H

## Demographic form

## Demographics Form

1. **What is your age** \_\_\_\_\_
2. **What gender do you most identify with right now?**
  - \_\_\_ Boy
  - \_\_\_ Girl
  - \_\_\_ Non-binary
  - \_\_\_ Prefer not to say
  - \_\_\_ Not listed \_\_\_\_\_
3. **Please specify what race you most identify with:**
  - \_\_\_ African American/Black
  - \_\_\_ Asian/ Pacific Islander
  - \_\_\_ White
  - \_\_\_ Native American or American Indian
  - \_\_\_ Native Hawaiian
  - \_\_\_ Other Pacific Islander
  - \_\_\_ Prefer not to answer
  - \_\_\_ Not listed \_\_\_\_\_
4. **Please specify what ethnicity you most identify with:**
  - \_\_\_ Hispanic/Latinx
  - \_\_\_ Non Hispanic/Latinx
  - \_\_\_ Prefer not to answer

**5. How often do you create any form of art outside of an art class at school?**

☐ Frequently

☐ Occasionally

☐ Rarely

☐ Never

**6. Have you ever used digital drawing materials before?**

☐ Frequently

☐ Occasionally

☐ Rarely

☐ Never

**7. Have you ever had art lessons (other than at school).**

☐ Yes

☐ No

If yes, please describe: \_\_\_\_\_



## Appendix I

## Debriefing form

## Debriefing Form: Superhero assessment of resilience

The purpose of this study is to create an art therapy assessment for resilience. Resilience means the ability to bounce back after a hardship. You were asked to make a superhero on Aggie.io © and answer an online survey that measured resilience. Your art piece will be looked at to see if there are any patterns that show up that relate to resilience. Understanding more about drawings of superheroes and how they relate to resilience can help art therapists work more effectively with teens.

If you would like to know the results of this study upon completion, please provide your email address below. Please note that I will not be able to provide individual results, but rather results will be reported in aggregate.

Email \_\_\_\_\_

If you would like to know more about art therapy, you can go the website for the American Art Therapy Association at [www.arttherapy.org](http://www.arttherapy.org) or read these books:

Malchiodi, C. (2011). *Handbook of art therapy*. Guilford Press.

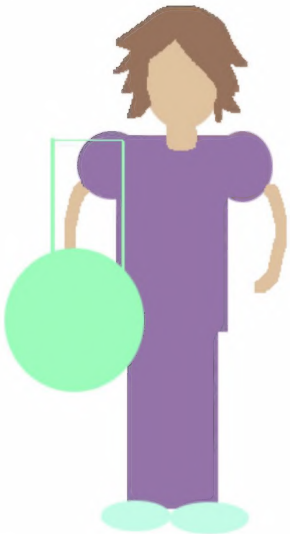
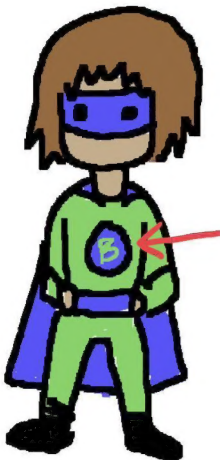

Malchiodi, C. (2006). *Art therapy sourcebook*. McGraw-Hill Education.

## Appendix J

## Superhero Resiliency Art Assessment Rater Manual

**Superhero Resiliency Art Assessment Rater Manual**

Caroline Heilbroner-Hammel

Sub-category: Words and Letters		Question/Description
<b>No = 1</b> 	<b>Yes = 2</b>	
		

Are words or letters present?

1. No
2. Yes

**No = 1:** No words or letters are present.**Yes = 2:** Words or letters are present either on or near the figure.

Appendix K  
Superhero Resiliency Art Assessment Rater Manual Script

**Superhero Resiliency Art Assessment Rater Manual Script**

Thank you for participating as a rater. I will be sending you a PDF of the manual to your Albertus Magnus email. This document is password protected. The password is \_\_\_\_\_. Please tell me when the form is open and you have entered the password.[wait for confirmation]

I will go over the manual with you. After each section, there will be time for questions.

All red markers on the example images are to highlight particular elements I explain.

First category is words and letters. Are words or letters present? No response indicates that there are no words or letters on or near the figure. Yes response indicates that there are words or letters present either on or near the figure. Are there any questions? [give room for questions]

Second category is arms extended. Are arms extended? No response indicates that arms are 90 degrees to 180 degrees lowered on the body as noted by the example image where the hands are by the hips of the figure. Somewhat response indicates that arms are at least 90 degrees raised from the body or that one arm is extended while the other arm is lowered. Yes response indicates arms are 90 degrees to 180 degrees raised above from the body as indicated by example images. Are there any questions? [give room for questions]

Third category is hand-drawn versus available shape library. Is the image mostly hand-drawn? The available shape library refers to the square and circle tools provided by the art program. Examples of the tools are given. Figure examples of No and Somewhat have red markers to indicate use of available shape library. No response indicates that the image is drawn 75% with the available shape library and at most 25% is hand-drawn. This would include aspects such as hand-drawn hair, arms, legs. Somewhat response indicates that images are drawn with 40%-50% available shape library while 50%-60% is hand-drawn. Yes response indicates the image is 75% hand-drawn. At most, 25% of the image is made with the available shape library. Are there any questions? [give room for questions]

Fourth category is developmentally appropriate. Is the figure at a developmentally appropriate artistic skill level for ages 11 and 12 year olds? This is based on Lowenfeld's Stages of artistic development. Examples of each stage can be found on the next page. No response indicates the figure's artistic skill level represents the developmental age of 5 years old or younger. Somewhat response indicates the figure's artistic skill level represents developmental age of 7 to 9 years old. Yes response indicates the figure's artistic skill level represents developmental age of 11-12 years old OR demonstrates above average artistic skill. Are there any questions? [give room for questions]

Fifth category is hands visible. Are hands visible? No response indicates that hands are omitted or hands are not visible. Yes response indicates hands are present or hands are visible. Are there any questions? [give room for questions]

Sixth category is feet visible. Are feet visible? No response indicates that feet are omitted or feet are not visible. Yes response indicates feet are present or feet are visible. Are there any questions? [give room for questions]

Seventh category is transparency. Is the figure transparent? Transparent is defined as the figure has an x-ray effect; a viewer is able to “see through” the figure's clothes and/or accessories. No response indicates that the figure is 75% or more opaque and that 25% or less of the figure is transparent. Somewhat response indicates that the figure is 30-70% opaque and that 20-25% of the figure is transparent. Yes response indicates the figure is 75% or more transparent. Are there any questions? [give room for questions]

Now that we’ve gone through the rater manual, I will be sending you a link to a secure Google Forms™ to complete. You will be rating 5 images and may use the manual as a guide. I will be sending you to a separate room using Zoom™ to complete the task. You may message me using the private chat system; however, please refrain from contacting your fellow raters. Please let me know when you have completed the task.

[send raters to separate rooms using the Zoom™ functions and wait for them to complete]

[Once complete] Thank you for taking time to rate these images. Your feedback is valuable. If you would like to know the aggregate results, please email me at [cjheilbronerhammel@albertus.edu](mailto:cjheilbronerhammel@albertus.edu).